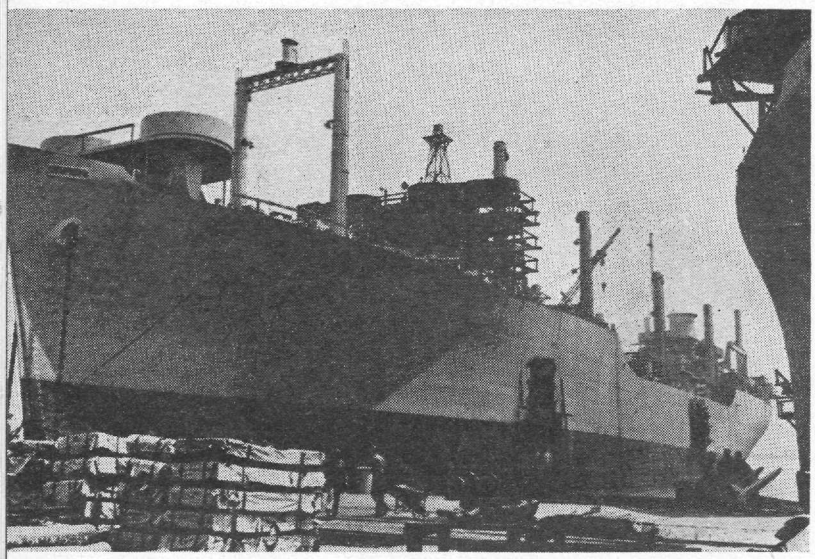
Our Merchant Marine Today

By JAY ANTENEN, M.E. IV

(Official U.S. Maritime Commission Photos)
(All cuts courtesy of Power)

(The author, Jay Antenen, a Senior in Mechanical Engineering, spent six weeks last summer as radio operator on a C-2 cargo ship, the **S. S. Sea Nymph,** carrying tanks and trucks to the invasion beachhead off Normandy.—Ed.)

The Merchant Marine has come into its own. Our present Maritime Commission was established in 1937 with vigorous Admiral Jerry Land as its head, who proceeded at once to revivify our waning Merchant Marine with what was considered an ambitious program in those days. Studies had indicated that 500 ships built over a period of ten years would provide us with a modern fleet of vessels, replacing the antiquated bottoms which at that time constituted our equivalent of England's famed (but odoriferous, according to American sailors) "Merchant Navy." Many of these old vessels were the Hog Islanders built during the last war but still held with some degree of reverence by sailors today.

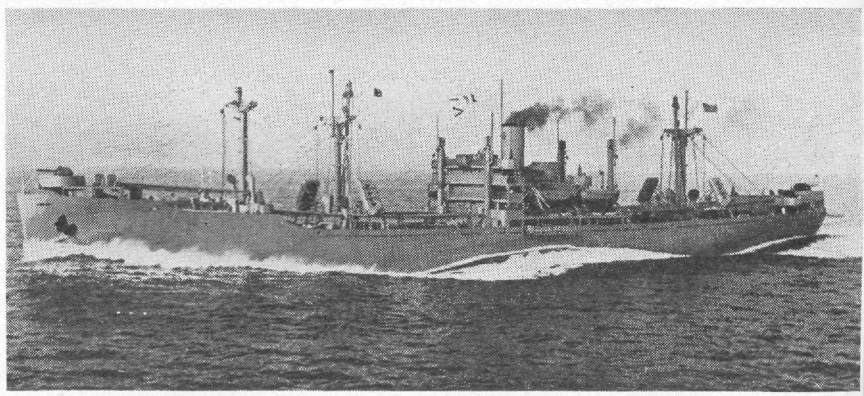


C4—Machinery installation at stern features newest vessel of cargo fleet. 523-ft. length, 72-ft. beam, 14,600 tons dead weight, and 15,000 miles cruising radius. Propulsion: 9000 shp by steam turbine.

In 1939, the first ship under the new program was launched. It was a "C" type vessel, one of the three fundamental types designed by the Commission. The C-1 of 5,000 gross tons, the C-2 of 6,000 gross tons, and the C-3 of 8,000 gross tons, each with certain modifications to suit different companies, but all with a high degree of standardization to lower fabricating costs, were to form the backbone of our new fleet. Nearly fifty of these were produced in the first year.

Since by the end of 1939 the war in Europe was stepping up in tempo, it was deemed advisable to speed up the building program to 100 ships a year. By 1940, this number was stepped up to 200 ships. England, by then, was being slowly strangled by Germany's ferocious submarine warfare and ordered 60 vessels of an old and proved type from American shipyards. They were low speed, fairly large cargo ships equipped with Scotch boilers and triple-expansion reciprocating engines.

Before these ships were delivered, however, it became evident that our plan for building C-type ships was inadequate, so the English designed a vessel destined to become the EC-2 or **Liberty** ship. This was incorporated in our own program of expansion. It soon became the World War II emergency, expendable ship, the workhorse of the Merchant Marine, designed for mass production. The time-tried 2500 horsepower reciprocating engines were soon being manufactured all over the country by a dozen different companies and ship building yards on the Atlantic, Gulf, and Pacific coasts were presently vying with each other in speed of production of the standardized



VC2—Victory type takes over where Liberty leaves off, production-line built, but faster. Length 455 ft., 62-ft. beam, 10,850 tons dead weight. Some have 6,000 shp standardized geared-turbine drive, others 8500 shp units.

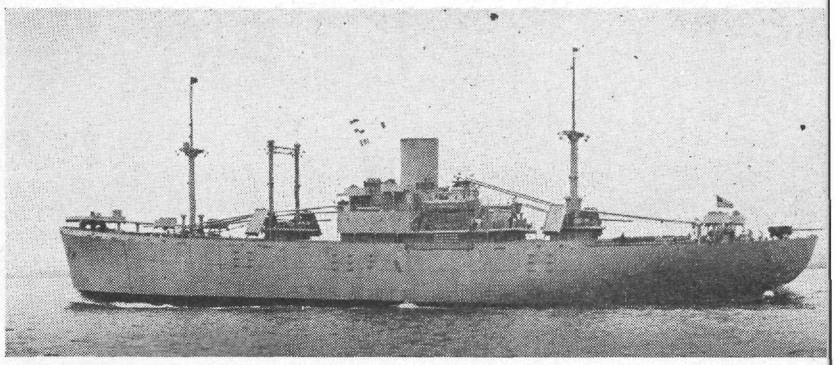
design of the Liberty. The average building time at the height of the Liberty program was 41.5 days, the nebulous Henry Kaiser of California setting a ten-day record time. Speed of construction and economy was accomplished through new welding techniques, and prefabrication, with giant new cranes lifting the heavy sections into place.

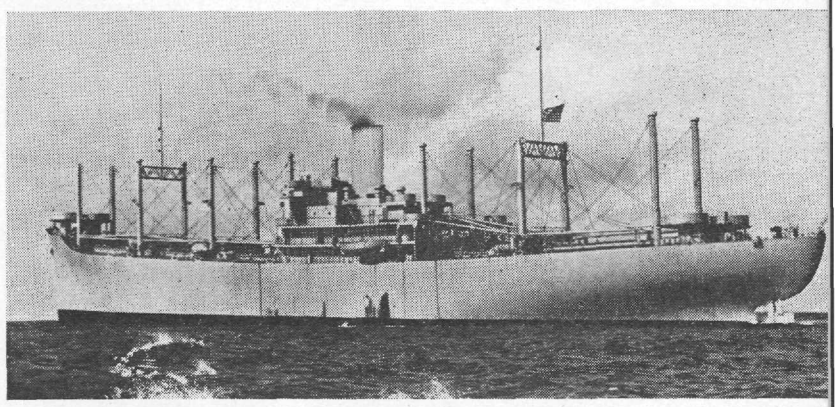
But this Liberty ship building program was only superimposed on the C-ship schedule, and did not replace it. Many C-ships continued to be constructed and were considered to be vessels with a definite post-war future, whereas the Liberty ship's destiny after the war was then and remains still a hazy problem to be solved at the war's end. The Liberty ship program has been tapering off. In 1943, the maximum 1238 were finished; in 1944, 739, with only 100 ships scheduled for this year.

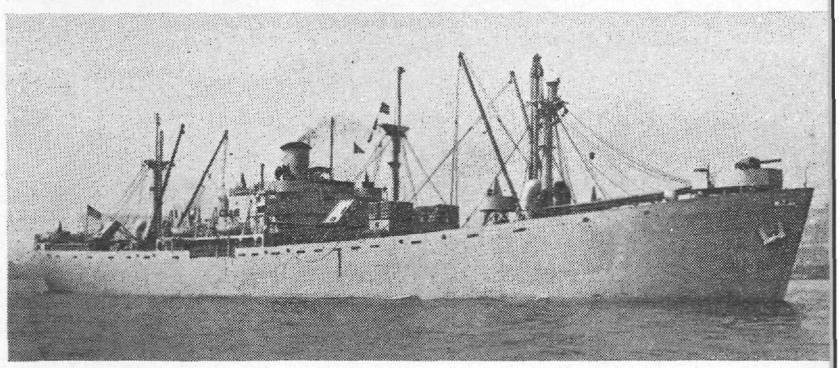
The Liberty ship has proved to be one of the greatest factors in our success in this war. With it (or her) we have been able to transport a parge percentage of the supplies needed overseas. But for post-war work it will be much too slow and uneconomical. It is impossible to push a Liberty ship any faster than 13½ knots because it will simply pile up a bigger bow wave despite any increase in horsepower. The Liberty is commonly referred to as a "ten-and-a-half knot" ship.

Mostly because of post-war economic reasons, but partly because of the need for a ship fast enough to avoid submarines, the Liberty was redesigned to remedy this defect. Similar to a Liberty ship, but with 17 feet added to the bow, this new design called the "Victory" ship is able to make use of 6000 shp and 8500 shp turbines installed in it. The larger turbines will drive the Victory at 16½ knots which is almost equal to that of the C-2 type ship. At present, so many Victory ships are being turned out (mostly on the West Coast) that it has been a decided trouble to find names for them. The most recent plan has been to name them after colleges.

At the end of the war, the United States will have in its possession the largest fleet of merchant ships the world has ever seen. It will consist of the myriads of Liberty ships, many Victories, cargo ships of the C-type, high-class tankers built before and during the war, and a number of passenger ships like the *Washington* and the *Manhattan*. It will be larger than England's merchant navy which has been a dominating factor for so many years. It will be a problem to decide just what to do with the excess Liberties, some of which already have been sold to England. Much credit in shipping circles is given to Admiral Land who has prevented us







C1-A (top)—Smallest of three original ship designs for general cargo purposes. 412-ft. length, 60-ft. beam, 7416-ton dead weight. Propulsion: 4000 shaft hp by steam turbine or Diesel.

C3 (middle)—Biggest and fastest of original trio, these ships will have a permanent place in America's merchant marine, 492-ft. length, 70-ft. beam, 12,929 tons dead weight. Propulsion: 8500 shp by steam turbine.

EC2 (lower)—Work horse of World War II, well-known Liberty ship developed from original C2 designs for mass production; 442-ft. length, 57-ft. beam, 10,800 tons dead weight. Propulsion: 2500 shp by reciprocating steam engine.

from lend-leasing our favorite and most efficient ship, the C-type, to England during the war.

The Merchant Marine Academies set up under the Maritime Commission have trained the 5,000 odd men needed each month by newly constructed ships. There is an *esprit de corps* among the men

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operating our ships, especially among those graduates of the Academies that are the equal of any other service (except, perhaps, the Marines). The place of our Merchant Marine in our post-war economy is becoming a larger and larger topic of discussion and looms high in the many desiderata to be solved in the future.